Architectural Pattern Information Repository Templates

An architectural repository is a library of organized design and resource components intended for use in business and information technology problem solving. A useful repository enables storage and retrieval of architecture information. Through this retrievability, it enables expertise to be re-used by those with access. A repository made consisting of forms or templates integrates resources, their performance, and their potential uses in a searchable manner. The repository and its completed templates are organized based on a classification scheme which allows for the cataloging of this design and performance documentation.

There is no standard or typical repository design and few suitable COTS tools available. In the past, configuration management degraded into an unaffordable form of disparate lists and wiring diagram maintenance requiring excessive attention in very large systems. Since then, SQL, a query and database language standard, compliant software tools such as Structure by Framesoft which is actually a framework front-end tool with capabilities to access external files at distributed locations. They may use browsers and Internet web-based capabilities, network resource sniffers to identify "what is out there and where", and enhanced drawing tools permitting configuration work to be performed more cost-effectively. In addition, the widespread use of SQL will offer advantages over past proprietary applications in that it is more capable and efficient at digging out the information about very large multi-dimensional architectures.

In the past, configuration information repositories were managed by centralized organizations that imposed reporting responsibilities on those whose configurations were being "managed". The information principles for them generally depended upon "information when available" rather than "information on demand". Since previous repositories were not integrated with other office automation or systems management applications, reporting organizations had to reformat text and tables or drawings to fit the "centralized" description of acceptable inputs. Lacking connectivity and standard import/export capabilities, the receiving organization had to re-enter this data into their local repository.

The use of Internet, intranets, and the world wide web, when combined with modern web based products and capabilities, allows traditional objectives of configuration management, architecture design and investment, and local tailoring of information technologies to be "fully distributed" at the locations where this information is used most frequently. The use of the web for connectivity enables access from anywhere by authorized users to perform design, component, or standards surveys. The modern approach to centralized configuration repositories is to decentralize them and provide connectivity to enable "global" architecture information retrieval. In this sense, the "real" repository is a virtual description of actual templates similarly organized and housed throughout the enterprise using a common means of search, access, retrieval, and local storage of "database" extracts.

Regardless of the actual software tools and implementation approach, the template below identifies the most critical information types and elements needed to meet enterprise architecture

purposes.

It is divided into three parts: Reference Data which contains information about a pattern or configuration for storage and retrieval purposes, Pattern Characteristics which provide a means of capturing the purposes, attributes, and performance characteristics of a particular pattern or configuration, and Contact, Reviewer and Validation Comments which provide a basis for collecting knowledge about a particular configuration or its implementation, regardless of location.

The sample, below is intended to show some of the interactive capabilities made possible by web technology. The use of icons, "click here" buttons for menus or for issuing commands to other URLs, "smart" lists based on information already entered, user-definable key word searches, and an attribute coding structure for the most essential information provide the means of making this type of repository useful, analytically efficient, and maintainable over the life of the architecture. The importance of retaining past configurations and capabilities used within the enterprise has re-use value to new designers. That is, although some sites may "upgrade" their configurations to newer versions, other sites may find that they have a need for insight into their own designs which may require use of "out-dated" patterns and configurations. Since the enterprise architecture should evolve incrementally and piecemeal, yesterday's designs here may be tomorrow's designs over there.

Part 1 - Pattern Reference Data			
Pattern #: (entered) (Click for...) **Value Chain ID:** (entered) (Click for ...) **Repository File Name:** (entered)	**Variant Pattern # and File name:** (listed)	**Date/As Of:** (date)	**Developer:** (entered) **Adopted:** (date) **Security Code:** (levels) (Click for ...)
Process Suitability: (listed) (Click for ...)	**Category** B - Baseline X - Experimental P - Pilot S - Special T - Target V - Vision O - Other (External) (identified) (Click for ...)	**Nestedness:** DB - Departmental Business DI -Departmental Infrastructure C - Corporate Systems S- Site (local) OF - Office or Business Unit OT - Other (Click for...)	

Part 2 - Pattern Characteristics

Pattern Purpose(s):
(listed)(Click for ...)

Pattern Capacity and Performance Metrics:

A. Upper Bounds:

B. Lower Bounds:

C. Related Figures and Tables

Advantages:
(listed) (Click for ...)

Disadvantages:
(listed)(Click for ...)

Related Pattern Picture(s): (high level abstract of connectivity of major resources)	**Major Resource Types:** (listed) (Click for ...)	**Demonstrated Minimum Design Characteristics:** (from Guidance, etc.) (Click for...)	**Standards:** (as applicable, including DOE Profiles) (Click for...)

Where Used Now: (list)(Click for ...)	**Typical Bill of Materials and Vendor Names:** (list)(Click for ...)
Development Metrics:(Click for Wizards) **A. Detailed Design Time:** **B: Development Time:** **C. Test and Acceptance Time:** **D. Deployment Time per site:**	**Investment Metrics:** (Click for Wizards) **A. Development Cost:** **B. Operations and Maintenance Cost:** **C. Annual Benefits:**

Exceptions and Waivers Required: (Click for ...)

A. Departmental IA Standards:

B. Departmental IA Guidance:

C. Departmental Procurement Guidance:

D. Departmental Investment Guidance:

E. Departmental IA Vision:

F. Software/Systems Development:
G. Other:

Part 3 - Contact, Reviewer, and Validation Information	
(Click button to enter comments...)	
Point of Contact (1)	**Comments:**
Point of Contact (2)	**Comments:**
Point of Contact (3)	**Comments:**
Point of Contact (4)	**Comments:**
Expert Reviewer (1)	**Comments:**
Expert Reviewer (2)	**Comments:**
Expert Reviewer (3)	**Comments:**
Expert Reviewer (4)	**Comments:**
Pattern Pictures (Click for viewing Pattern Library...)	
(pages a of b)	